Westinghouse

Premium

Indirect Water Heaters

Installation

Start-Up

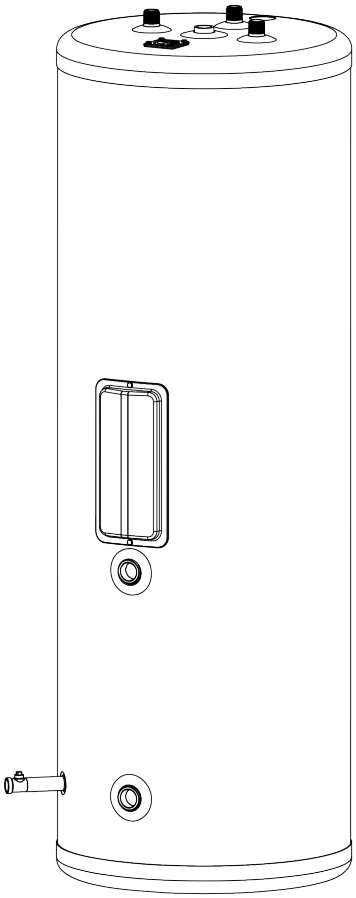
Maintenance

Parts

Warranty

For Residential and Commercial Use

WI Models



The surfaces of these products contacted by potable (consumable) water contain less than 0.25% lead by weight as required by the Safe Drinking Water Act, Section 1417.

⚠WARNING

This manual must only be used by a qualified installer / service technician. Read all instructions in this manual before installing. Perform steps in the given order. Failure to do so could result in substantial property damage, severe personal injury, or death.

NOTICE

Westinghouse reserves the right to make product changes or updates without notice and will not be held liable for typographical errors in literature.

NOTE TO CONSUMER: PLEASE KEEP ALL INSTRUCTIONS FOR FUTURE REFERENCE.

SPECIAL ATTENTION BOXES

The following defined terms are used throughout this manual to bring attention to the presence of hazards of various risk levels or to important product information.

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in serious personal injury or death.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor personal injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

NOTICE is used to address practices not related to personal injury.

Foreword

This manual is intended to be used in conjunction with other literature provided with the water heater. This includes all related control information. It is important that this manual, all other documents included in this system, and additional publications including the *Code for the Installation of Heat Producing Appliances* (latest version), be reviewed in their entirety before beginning any work.

Installation should be made in accordance with the regulations of the Authority Having Jurisdiction, local code authorities, and utility companies which pertain to this type of water heating equipment.

Authority Having Jurisdiction (AHJ) – The AHJ may be a federal, state, local government, or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department or health department, building official or electrical inspector, or others having statutory authority. In some circumstances, the property owner or his/her agent assumes the role, and at government installations, the commanding officer or departmental official may be the AHJ.

NOTE: Westinghouse reserves the right to modify product technical specifications and components without prior notice.

For the Installer

This water heater must be installed by qualified and licensed personnel. The installer should be guided by the instructions furnished with the water heater, and by local codes and utility company requirements.

Installations Must Comply With:
Local, state, provincial, and national codes, laws, regulations, and ordinances.

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Part 1 - General Safety Information

This water heater is approved for indoor installations only and is not intended for use as a pool heater. Clearance to combustible materials: 0" top, bottom, sides, and back. Heater must have room for service: 24" front, 6" top, and 0" sides are minimum recommended service clearances. (A combustible door or removable panel is acceptable front clearance.) This water heater has been approved for closet installation and installation on combustible flooring. Do not install directly on carpeting. Install the water heater in a location where temperature and pressure relief valve discharge or a leak will not result in damage to the surrounding area. If such a location is not available, install an auxiliary catch pan.

⚠ WARNING

Installer - Read all instructions in this manual before installing. Perform steps in the given order.

User - This manual is for use only by a qualified heating installer / service technician. Have this water heater serviced / inspected annually by a qualified service technician.

FAILURE TO ADHERE TO THESE GUIDELINES CAN RESULT IN SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY, OR DEATH.

NOTE: Obey all local codes. Obtain all applicable permits before installing the water heater.

NOTE: Install all system components and piping in such a manner that does not reduce the performance of any fire rated assembly.

⚠ WARNING

NOTE: If the water heater is exposed to the following, do not operate. Immediately call a qualified service technician.

1. Fire
2. Damage
3. Water

Failure to follow this information could result in property damage, severe personal injury, or death.

CAUTION

High heat sources (sources generating heat 100°F / 37°C or greater, such as stove pipes, space heaters, etc.) may damage plastic components of the water heater as well as plastic vent pipe materials. Such damages ARE NOT covered by warranty. It is recommended to keep a minimum clearance of 8" from high heat sources. Observe heat source manufacturer instructions, as well as local, state, provincial, and national codes, laws, regulations and ordinances when installing this water heater and related components near high heat sources.

Do not use this water heater for anything other than its intended purpose (as described in this manual). Doing so could result in property damage and WILL VOID product warranty.

NOTICE

UNCRATING THE WATER HEATER - Any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.

A. When Servicing the Water Heating System

To avoid electric shock, disconnect electrical supply before performing maintenance.

To avoid severe burns, allow water heater and associated equipment to cool before servicing.

B. Heater Water

Do not use petroleum-based cleaning or sealing compounds in a water heating system. Gaskets and seals in the system may be damaged. This can result in substantial property damage.

Do not use "homemade cures" or "patent medicines". Damage to the water heater, substantial property damage, and/or serious personal injury may result.

NOTICE FOR SINGLE-WALL HEAT EXCHANGER MODELS

Per the Uniform Plumbing Code:

Single-wall heat exchangers are permitted if they satisfy all of the following requirements:

The heat exchanger medium is potable water or contains only substances which are recognized as safe by the US Food and Drug Administration (FDA).

The pressure of the heat exchanger medium is maintained less than the normal minimum operating pressure of the potable water system (steam systems must comply with this statement).

The equipment is permanently labeled to indicate that only additives recognized as safe by the FDA shall be used as the heat transfer medium.

Other heat exchanger designs may be permitted where approved by the AHJ.

C. Freeze Protection

NOTE: Consider piping and installation when determining heater location. Place the water heater as close to the boiler as possible in a location not prone to freezing.

CAUTION

Failure of the water heater due to freeze related damage IS NOT covered by product warranty.

In water heaters with single wall heat exchangers, the heat transfer fluid must be water or nontoxic food grade glycol, FDA rated "generally recognized as safe" (GRAS) and having a toxicity rating or class of 1, as listed in Clinical Toxicology of Commercial Products, 5th edition. Ensure the system is permanently labeled to indicate any additives used in the heat transfer fluid.

⚠ WARNING

NEVER use any toxic chemical, including automotive, standard glycol antifreeze, or ethylene glycol made for hydronic (non-potable) systems. These chemicals can attack gaskets and seals in water systems, are poisonous if consumed, and can cause personal injury or death.

D. Water Temperature Adjustment

If the water heater is going to have a set temperature above 120°F, you must use an ASSE 1017 rated mixing valve to avoid severe burns or death from scalding temperatures.

⚠ WARNING

Households with small children, disabled, or elderly persons may require a 120°F or lower temperature setting to prevent severe personal injury or death due to scalding.

Approximate Time / Temperature Relationships in Scalds	
120°F	More than 5 minutes
125°F	1 1/2 to 2 minutes
130°F	About 30 seconds
135°F	About 10 seconds
140°F	Less than 5 seconds
145°F	Less than 3 seconds
150°F	About 1 1/2 seconds
155°F	About 1 second

Table 1 - Approximate Time / Temperature Relationships in Scalds

Part 2 - Prepare the Water Heater

Remove all sides of the shipping crate to allow the heater to be moved into its installation location.

CAUTION

COLD WEATHER HANDLING - If the water heater has been stored in a very cold location (BELOW 0°F) before installation, handle with care until the components come to room temperature. Failure to do so could result in damage to the water heater.

NOTE: A drain valve is included with the water heater.

A. Locating the Water Heater

CAUTION

High heat sources (generating heat 100°F / 37°C or greater, such as boiler flue pipes, space heaters, etc.) may damage plastic components of the water heater as well as plastic vent pipe materials. Such damages ARE NOT covered by warranty. It is recommended to keep a minimum clearance of 8" from high heat sources. Observe heat source manufacturer instructions, as well as local, state, provincial, and national codes, laws, regulations, and ordinances when installing this water heater and related components near high heat sources.

This water heater is certified for indoor use only. DO NOT INSTALL OUTDOORS. Outdoor installations ARE NOT covered by warranty.

Choose a location for the water heater as centralized to the piping system as possible. Also, locate the water heater and domestic water piping where it will not be exposed to freezing temperatures. All piping should be insulated. Additionally, place the water heater so that the drain, controls, and inlets/outlets are easily accessible.

CAUTION

Locate the water heater where any leakage from the relief valve, related piping, tank, or connections will not result in damage to surrounding areas or lower floors of the building. The water heater should be located near a floor drain or installed in a drain pan. Leakage damages ARE NOT covered by warranty.

NOTE: To save on heating costs and improve energy efficiency keep the distance between the boiler and water heater to a minimum to reduce heat loss from excess piping and keep friction loss at a minimum. Ensure all piping between the boiler and water heater is properly insulated to minimize heat loss.

The water heater may be located some distance from the boiler provided the circulator meets flow requirements through the coil. The greater the distance from the water heater to the boiler the longer the response will be to a call for hot water.

This water heater must be installed vertical on a level surface.

NOTE: In the State of California, the water heater must be braced, anchored, or strapped to avoid moving during an earthquake. Contact local utilities for code requirements in your area. Visit http://www.dsa.dgs.ca.gov or call 1-916-445-8100 and request instructions.

However, applicable local codes shall govern installation. For residential water heaters of a capacity of greater than 52 gallons, consult the local building jurisdiction for acceptable bracing procedures.

NOTE: If you do not provide the minimum clearances shown in Figure 1, it might not be possible to service the water heater without removing it from the space.

⚠ WARNING

Ensure the location can support the entire filled weight of the water heater. Failure to properly support the water heater could result in property damage, severe personal injury, or death.

⚠ DANGER

This water heater must not be located near flammable liquids such as gasoline, butane, liquefied propane, adhesives, solvents, paint thinners, etc., as the controls of this water heater could ignite these vapors and cause an explosion resulting in property damage, severe personal injury, or death.

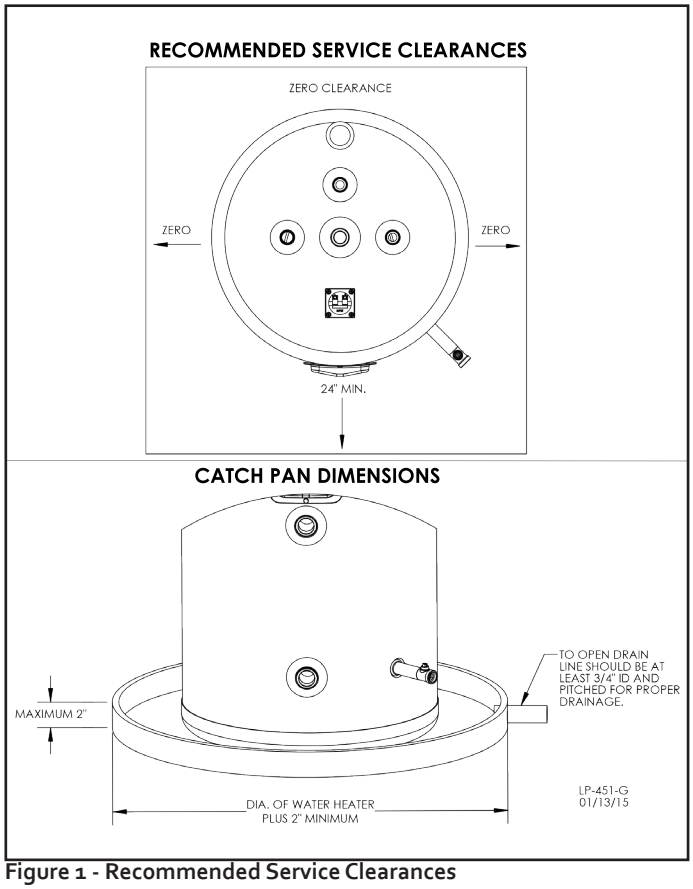


Figure 1 - Recommended Service Clearances

B. Water Chemistry Requirements

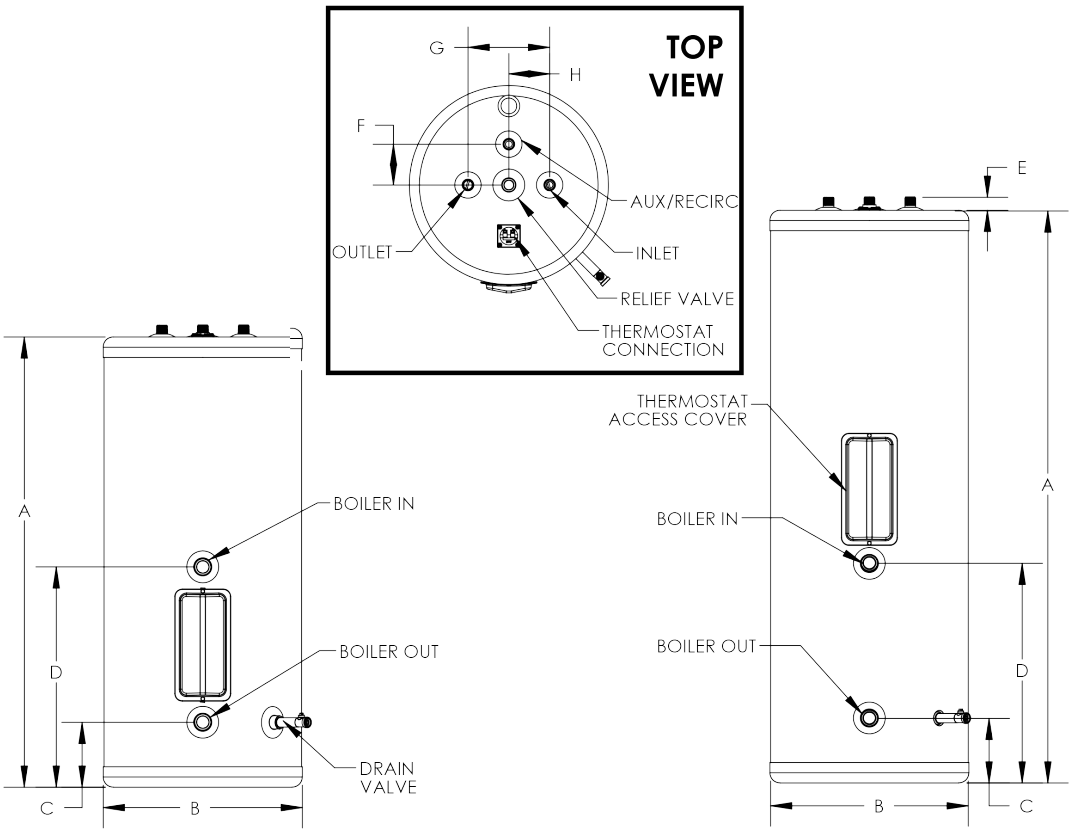
CAUTION

Chemical imbalance of the water supply may affect efficiency and cause severe damage to the water heater and associated equipment. Westinghouse recommends having water quality professionally analyzed to determine whether it is necessary to install a water softener. It is important that the water chemistry on both the domestic hot water and central heating sides are checked before installing the water heater, as water quality will affect the reliability of the system. In addition, operating temperatures above 135°F will further accelerate the build-up of lime scale and may shorten the service life of the water heater. Failure of a water heater due to lime scale build-up, low pH, or other chemical imbalance IS NOT covered by the warranty.

The following are water quality parameters that need to be met in order for the system to operate efficiently for many years.

Water Hardness

Water hardness is mainly due to the presence of calcium and magnesium salts dissolved in water. The concentration of these salts is expressed in mg/L, ppm, or grains per gallon as a measure



MODEL	A	B	C	D	E	F	G	H	CAPACITY U.S. GAL.	DOMESTIC CONNECTION
30	44"	19-3/8"	6-3/8"	21-1/2"	1-3/8"	4"	8"	4"	30 GAL.	3/4" NPTM
40	56-1/2"								40 GAL.	
50	68-3/4"								50 GAL.	
60	54-5/8"	23-1/2"							60 GAL.	1" NPTM
80	71"								80 GAL.	
100	64-7/8"	27-1/2"	8-5/8"	20-3/4"	2"				100 GAL.	1-1/2 NPTM

MODEL	HEAT EXCHANGER SURFACE	TEST PRESSURE	WORKING PRESSURE	180° BOILER WATER FIRST HOUR RATINGS (GAL) * 140° F	180° F BOILER BTU/SIZE	RECOMMENDED FLOW RATE	PRESSURE DROP AT RECCOMENDED FLOW	DRY WEIGHT
30	15 SQ. FT.	300 PSI	150 PSI	228	95,700	8 GPM	1.7 FT	95 LBS
40				257	122,265	10 GPM	2.3 FT	111 LBS
50				287	148,830	10 GPM	2.3 FT	127 LBS
60				303	155,230	10 GPM	2.3 FT	140 LBS
80	18 SQ. FT.			347	192,000	12 GPM	3 FT	157.5 LBS
100				393	209,000	14 GPM	3.75 FT	231 LBS

*DOE TEST METHOD BASED ON 90° F TEMPERATURE RISE, 50° /140° W/BOILER WATER AT 180° F

NOTE: TANK RECOVERY FROM COLD START WILL BE BETWEEN 10-13 MINUTES WHEN SIZED WITH CORRECT FLOW RATE, BOILER SIZE AND PRESSURE DROP RATINGS FROM LIST IN ABOVE CHART.

CONTINUOUS FLOW RATING CALCULATION:
FIRST HOUR RATING - (.75 * GALLON CAPACITY) = CONTINUOUS FLOW RATING

Figure 2 - Specifications and Dimensions

of relative water hardness. Grains per gallon is the common reference used in the US water heater industry. Hardness expressed as mg/L or ppm may be divided by 17.1 to convert to grains per gallon. Water may be classified as very soft, slightly hard, moderately hard, or hard based on its hardness number. The minerals in the water precipitate out as the water is heated and cause accelerated lime scale accumulation on a heat transfer surface. This lime scale build-up may result in premature failure of the water heater. Operating temperatures above 135ºF will further accelerate the build-up of lime scale and may shorten the service life of the water heater.

Water that is classified as hard and very hard must be softened to avoid water heater failure.

CLASSIFICATION	MG/L OR PPM	GRAINS/GAL
Soft	0 - 17.1	0 - 1
Slightly Hard	17.1 - 60	1 - 3.5
Moderately Hard	60 - 120	3.5 - 7
Hard	120 - 180	7 - 10.5
Very Hard	180 and over	10.5 and over

If the hardness of the water exceeds the maximum level of 7 grains per gallon, the water should be softened to a hardness level no lower than 5 grains per gallon. Water softened as low as 0 to 1 grain per gallon may be under-saturated with respect to calcium carbonate, resulting in water that is aggressive and corrosive.

pH of Water

pH is a measure of relative acidity, neutrality, or alkalinity. Dissolved minerals and gases affect water pH. The pH scale ranges from 0 to 14. Water with a pH of 7 is considered neutral. Water with pH lower than 7 is considered acidic. water with a pH higher than 7 is considered alkaline. A neutral pH (around 7) is desirable for most potable water applications. **Corrosion damage and tank failures resulting from water pH levels of lower than 6 or higher than 8 ARE NOT covered by warranty.** The ideal pH range for water used in a water heater is 7.2 to 7.8.

Total Dissolved Solids

Total Dissolved Solids (TDS) is a measurement of all minerals and solids dissolved in a water sample. The concentration of TDS is usually expressed in parts per million (ppm).

Water with a high TDS concentration will greatly accelerate lime and scale formation in the hot water system. Most high TDS concentrations precipitate out of the water when heated. This can generate a scale accumulation that will greatly reduce the service life of the water heater.

The manufacturer of the water heater has no control over water quality, especially TDS levels in your system. TDS in excess of 2000 ppm will accelerate lime and scale formation on the element or the heat exchanger. Water heater failure due to TDS in excess of 2000 ppm IS NOT covered by warranty. **Failure of a water heater due to lime scale build-up IS NOT covered by warranty.**

Hardness: 7 grains
Chloride levels: 100 ppm
pH levels: 6 - 8
TDS: 2000 ppm
Sodium: 20 mG/L

Part 3 - Piping

A. Plumbing

It is mandatory that all plumbing be done in accordance with federal, local, and state plumbing codes and practices. Failure to properly install the water heater WILL VOID the warranty. It is also necessary to use both thread tape and pipe dope on all mechanical plumbing connections.

CAUTION

When filling the water heater, open a hot water tap to release air in the tank and piping. Failure to do so could lead to improper water heater operation and damage to components.

DO NOT pipe this water heater with black iron, galvanized steel, steel, or lead pipe. Doing so will result in premature product failure and property damage, and WILL VOID the product warranty.

B. Boiler Connections

CAUTION

Use two wrenches when tightening water piping at the heater. Use one wrench to prevent the heater return or supply line from turning. Failure to prevent piping connections from turning could cause damage to water heater components.

Use a 1" nominal minimum pipe size when piping with zone valves or circulators.

On the water heater, the boiler supply connects to the outlet of the circulator. The circulator inlet is to be connected to the hot outlet side of the boiler. Be sure that the arrow on the circulator is facing the correct flow direction. (See pressure drop sizing for circulator, this manual.) On the tank, the boiler return connects to the return side of the boiler. The return(s) from heating loop(s) should have a flow check or swing check valve installed before the return pipe from the tank.

In a steam boiler, the tank supply must be connected to the boiler well below the minimum water level. A strainer and drain valve should be installed at the boiler for periodic draining of scale and sludge. Banging and steam bound traps will occur if the boiler water supplied to the heat exchanger has steam or is slightly above the low water cut-off.

C. Domestic Piping Inlet

CAUTION

Never use dielectric fittings or galvanized steel fittings on any domestic water connections. Use only copper or brass fittings. Failure to do so will result in premature water heater failure. Such failure IS NOT covered by warranty.

Use both thread tape and pipe dope to connect to the all stainless steel 3/4" domestic inlet and outlet. A shut-off valve between the city water supply and tank inlet is recommended for ease of service.

It may be recommended to use a back flow preventer - check local codes. If a back flow preventer or no return valve is used, a thermal expansion tank must be installed on the cold water supply between the tank and valve. If the tank is replacing a tankless coil in the boiler, disconnect coil plumbing and use the cold water inlet and hot water outlet pipes for the water heater.

D. Auxiliary Connections

The auxiliary connections are additional connections for a recirculation line. These connections must be installed in accordance with all local and national codes or any applicable standard that prevails. Auxiliary connections are 3/4" on all models. Never use dielectric unions or galvanized steel fittings. Use only copper or brass fittings. Sealant must be used on all connections.

⚠ WARNING

Never connect auxiliary connections to any system that uses glycol or other solutions formulated for hydronic systems. These auxiliary connections are to be used only in a potable water system. Failure to follow this warning could result in severe personal injury or death.

E. Temperature and Pressure Relief Valve

On all models, an appropriate temperature and pressure (T&P) valve must be supplied and installed as detailed in the piping diagrams in this installation manual.

Use both thread tape and pipe dope to install an NPT brass T&P relief valve for hot water storage tanks, as required by local codes but not less than valves certified as meeting the requirements for relief valves for hot water heaters (ANSI Z21.22 / CSA 4.4) by a nationally recognized lab that maintains periodic inspection of production listed equipment. Make sure the relief valve is sized to the BTU/Hour capacity of the water heater. The T&P valve must be plumbed down so discharge can exit at least 6" above the structural floor. The relief line cannot be in contact with any live electrical parts. If the relief valve constantly weeps install an expansion tank. See expansion tank manufacturer's instructions for suggestions.

⚠ WARNING

To avoid water damage or scalding due to relief valve operation:

- Discharge line must be connected to relief valve outlet and run to a safe place of disposal. Terminate the discharge line in a manner that will prevent possibility of severe burns or property damage should the relief valve discharge.
- Discharge line must be as short as possible and the same size as the valve discharge connection throughout its entire length.
- Discharge line must pitch downward from the valve and terminate at least 6" above the floor drain, making discharge clearly visible.
- The discharge line shall terminate plain, not threaded, with a material serviceable for temperatures of 375°F or greater.
- Do not pipe discharge to any location where freezing could occur.
- No valve may be installed between the relief valve and heater or in the discharge line. Do not plug or place any obstruction in the discharge line.
- Test the operation of the relief valve after filling and pressurizing the system by lifting the lever. Make sure the valve discharges freely. If the valve fails to operate correctly, immediately replace with a new properly rated relief valve.
- Test T&P valve at least once annually to ensure the waterway is clear. If valve does not operate, turn the heater "off" and call a plumber immediately.
- Take care whenever operating relief valve to avoid scalding injury or property damage.

FAILURE TO COMPLY WITH THE ABOVE GUIDELINES COULD RESULT IN FAILURE OF RELIEF VALVE OPERATION, RESULTING IN POSSIBILITY OF SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY, OR DEATH.

Do not thread a cap or plug into the relief valve or relief valve line under any circumstances! Explosion and property damage, serious injury, or death may result.

⚠ WARNING

RE-INSPECTION OF T&P RELIEF VALVES: T&P valves should be inspected AT LEAST ONCE EVERY THREE YEARS, and replaced if necessary, by a licensed plumbing contractor or qualified service technician to ensure that the product has not been affected by corrosive water conditions and to ensure that the valve and discharge line have not been altered or tampered with illegally. Certain naturally occuring conditions may corrode the valve and its components over time, rendering the valve inoperative. Such conditions can only be detected if the valve and its components are physically removed and inspected. **Do not attempt to conduct an inspection on your own.** Contact your plumbing contractor for a re-inspection to assure continued safety.

FAILURE TO RE-INSPECT THE T&P VALVE AS DIRECTED COULD RESULT IN UNSAFE TEMPERATURE AND/OR PRESSURE BUILD-UP WHICH CAN RESULT IN PROPERTY DAMAGE, SERIOUS PERSONAL INJURY, OR DEATH.

F. Scalding

⚠ WARNING

An ASSE 1017 or ASSE 1070 temperature limiting or mixing valve is recommended in installations servicing disabled or elderly persons, or children. Mixing valves do not eliminate the risk of scalding.

To avoid scalding:

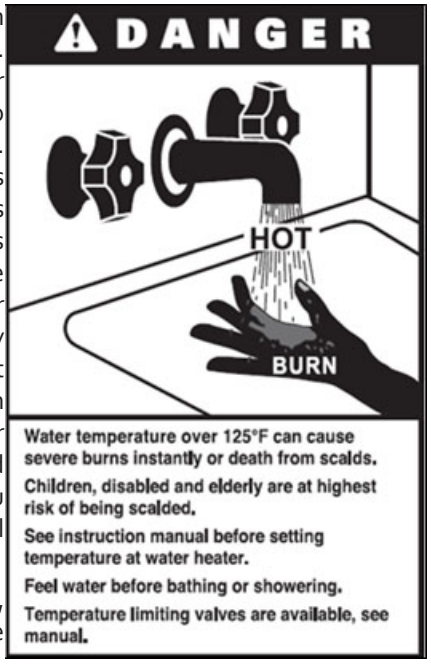
- Set the water heater set point temperature as low as possible.
- Feel water before bathing or showering.
- If thermostatic valves are required, use devices specifically designed for such purpose. Install these devices in accordance with instructions provided by the manufacturer.

Failure to install a temperature limiting or mixing valve and follow these instructions could result in property damage, severe personal injury, or death due to scalds.

Approximate Time / Temperature Relationships in Scalds	
120°F	More than 5 minutes
125°F	1 1/2 to 2 minutes
130°F	About 30 seconds
135°F	About 10 seconds
140°F	Less than 5 seconds
145°F	Less than 3 seconds
150°F	About 1 1/2 seconds
155°F	About 1 second

Table 2 - Approximate Time / Temperature Relationships in Scalds

This water heater can deliver scalding water. Be careful whenever using hot water to avoid scalding injury. Certain appliances such as dishwashers and automatic clothes washers may require increased water temperatures. By setting the thermostat on this heater to obtain the increased water temperature required by these appliances you may create the potential for scald injury.


DANGER
HOT
BURN
Water temperature over 125°F can cause severe burns instantly or death from scalds.
Children, disabled and elderly are at highest risk of being scalded.
See instruction manual before setting temperature at water heater.
Feel water before bathing or showering.
Temperature limiting valves are available, see manual.

To protect against injury, install a mixing valve in the water system. This valve will reduce point of use discharge temperatures by mixing cold and hot water in branch supply lines. Such valves are available from your local plumbing supplier.

Table 3 details the relationship of water temperature and time with regard to scald injury and may be used as a guide in determining the safest water temperature for your applications.

G. Potable Expansion Tank

A potable hot water expansion tank may be required to offset heated water expansion. If there is a back flow preventer or any other type of no return or check valve in the system a thermal expansion tank IS MANDATORY. The expansion tank must be sized for the entire water volume of the hot water system. A weeping relief valve indicates the need for an expansion tank. See the Typical Expansion Tank example in the Piping section for details.

H. Pressure Drop Sizing For Circulator

The boiler circulator flow rate must meet the requirements found in the water heater specifications, Part 2, this manual, or the published ratings cannot be achieved. The flow chart below represents the pipe run, water heater, and heat exchanger ONLY and does not include any flow checks, zone valves, or friction loss through the boiler. That resistance must be added to the value found in the following chart.

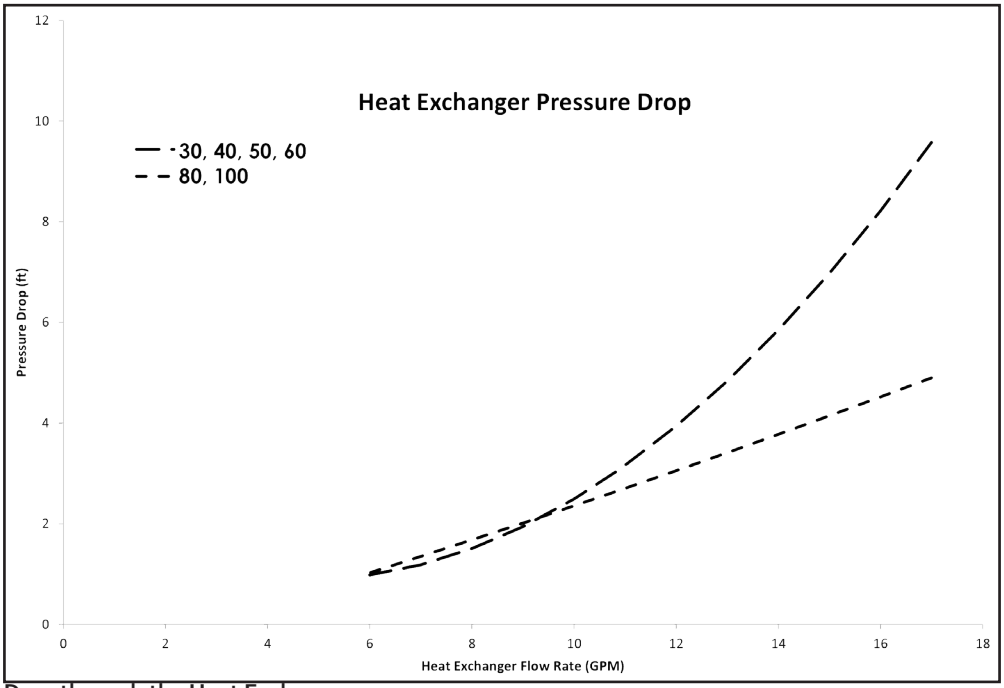


Figure 3 - Pressure Drop through the Heat Exchanger

I. Applications

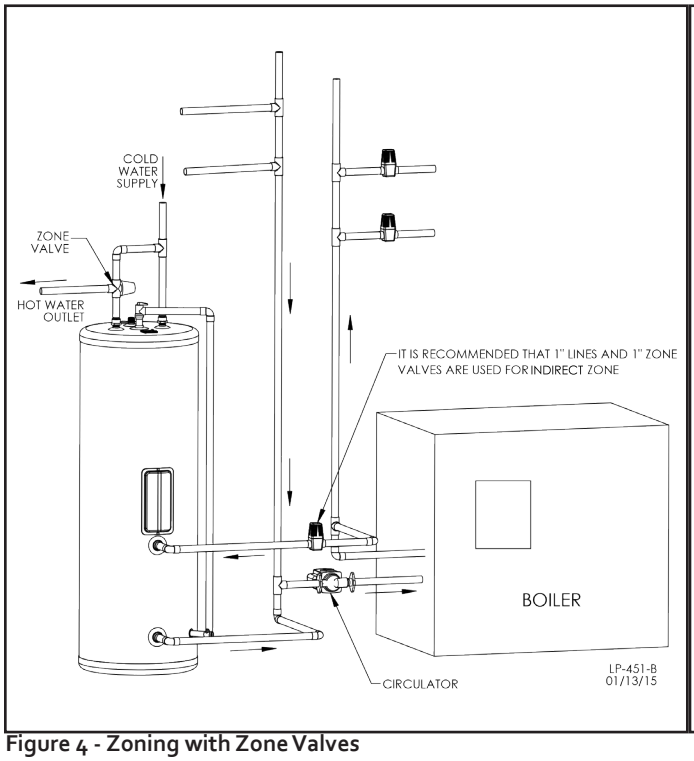


Figure 4 - Zoning with Zone Valves

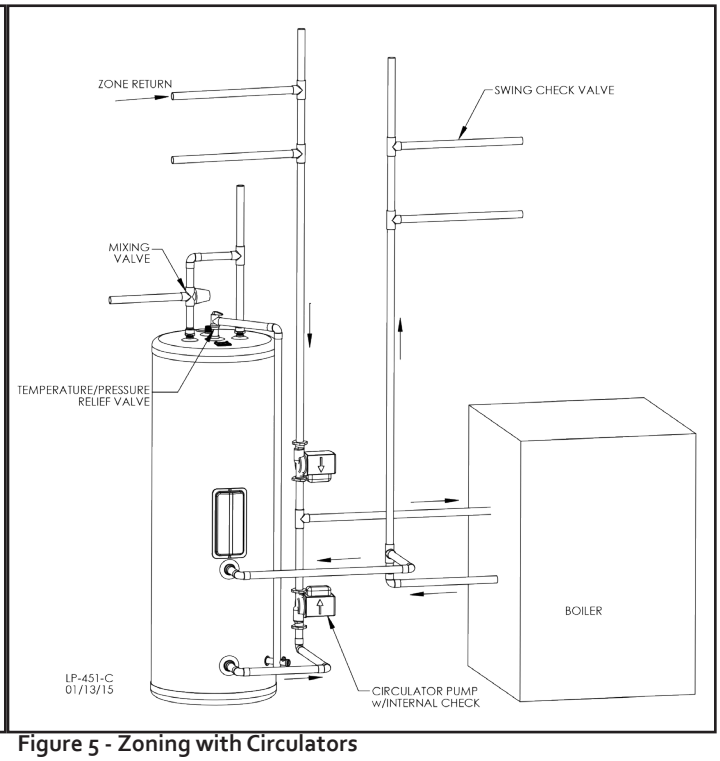


Figure 5 - Zoning with Circulators

PIPING NOTES:

The following notes are applicable to all of the piping applications demonstrated on this page.

1. Minimum pipe size should match connection size. Upsize pipe accordingly if greater flow is required.
2. A thermal expansion tank suitable for potable water must be sized and installed within this piping system between the backflow preventer and the cold water inlet.
3. All circulators should have an integral flow check.
4. Drains and check valve between unit and storage tank will assist in purging air from system.
5. This drawing is meant to demonstrate system piping only. The installer is responsible for all equipment and detailing required by local codes. In Massachusetts, you must install a vacuum relief valve per 248 CMR.
6. Mixing valve application is optional, but recommended to help prevent scalding. See Part 3 for more information.

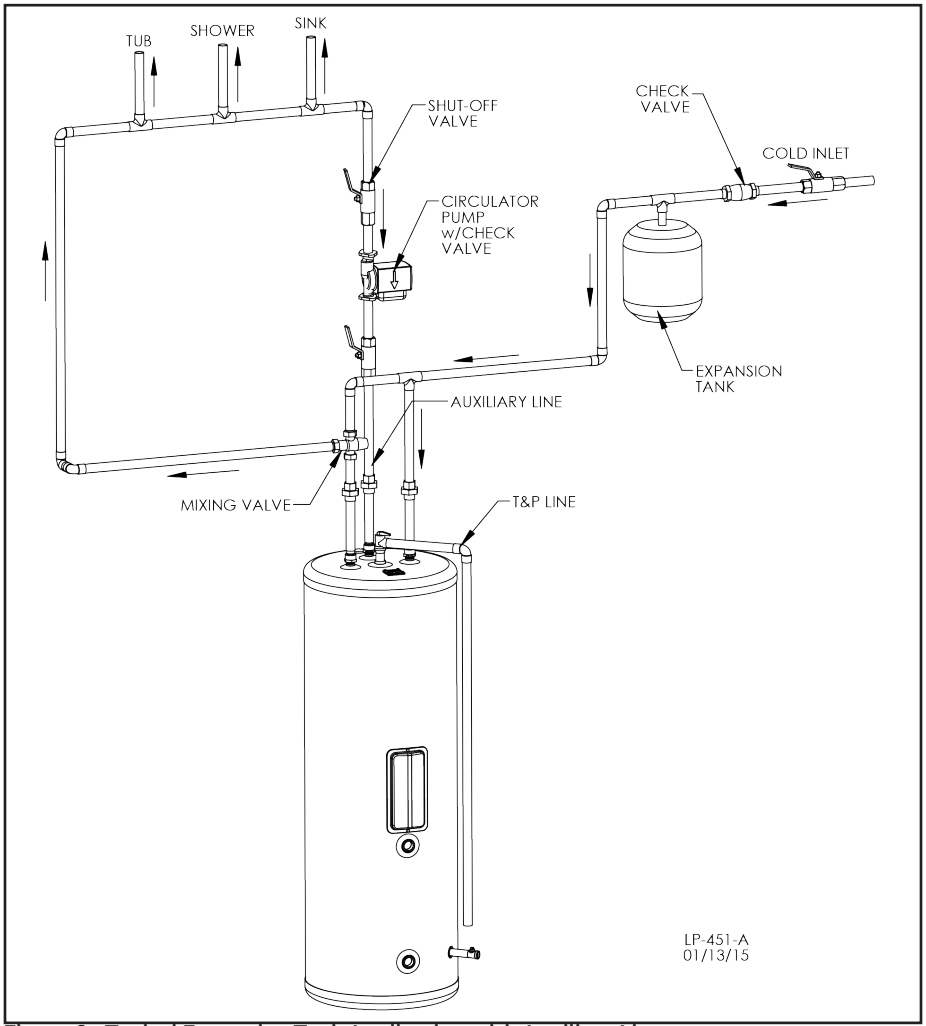


Figure 6 - Typical Expansion Tank Application with Auxiliary Line

Part 4 - Heater Control and Wiring

A. Control
A surface mount thermostatic control has been provided for accurate temperature adjustment.

B. Wiring
Wiring is to be done in accordance with all applicable local and state codes. Turn off all power related to the boiler before starting any wiring procedures. It is recommended that a disconnect switch be installed between the boiler control and the water heater.

CAUTION

When wiring the water heater and controls be sure to label all wires to ease future maintenance. Wiring errors can cause improper and dangerous operation.

A thermostat connection has been provided on the top of the water heater for easy wiring and accurate control. See Figure 7. Connect the wires from the thermostat to the terminals marked + (Positive) or - (Negative).

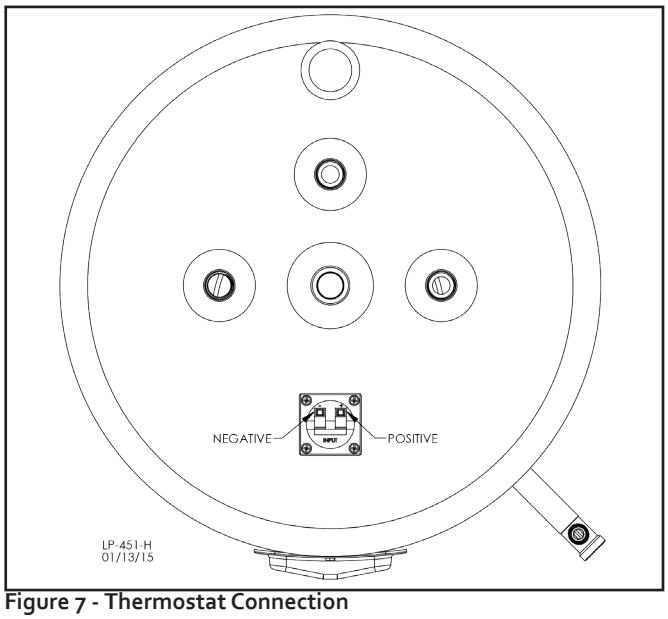


Figure 7 - Thermostat Connection

C. Wiring Diagrams

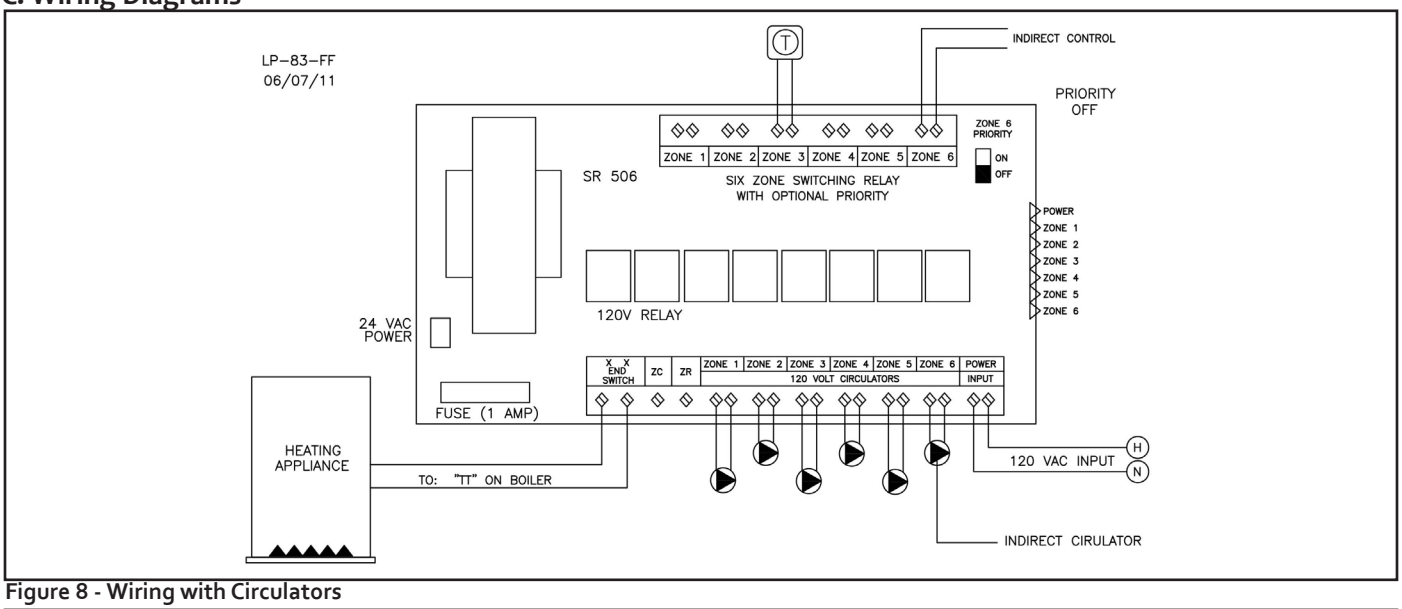


Figure 8 - Wiring with Circulators

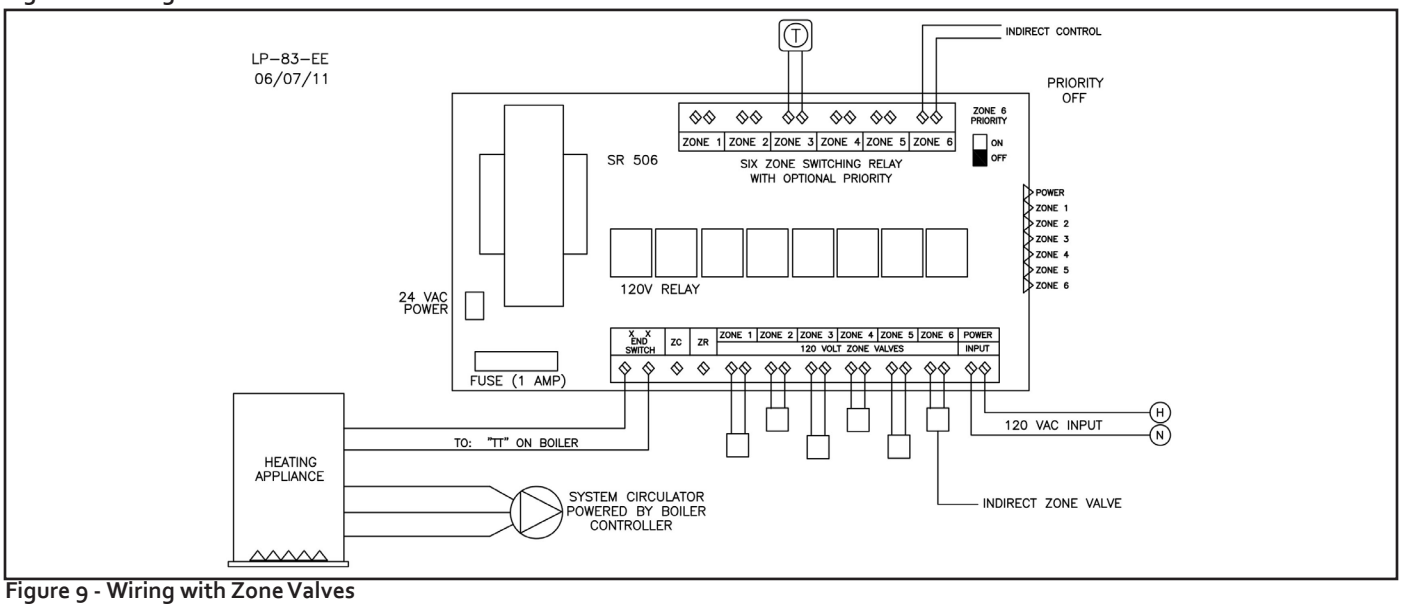


Figure 9 - Wiring with Zone Valves

Part 5 - Start-Up and Operation

1. Fill the water heater by opening the cold water shut-off valve. Make certain the field installed drain valve is completely closed. Purge air from the system by opening a hot water outlet at a fixture in a kitchen or bathroom. When water flows freely from the outlet, the system is purged.

CAUTION

When filling the water heater, open a hot water tap to release air in the tank and piping to ensure proper water heater operation. Failure to ensure the water heater is full before turning on the system will result in damage to the water heater, and could result in property damage. Such damages ARE NOT covered by warranty.

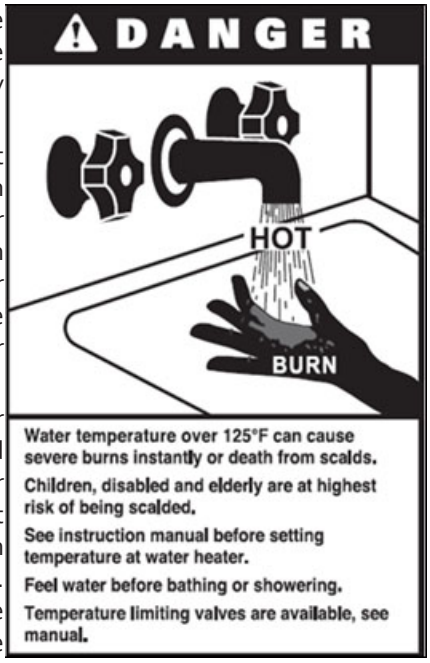
2. Check the system for leaks.

⚠ CAUTION

Fix any leaks before continuing the installation. Failure to do so could result in property damage or personal injury.

3. After ensuring there are no leaks within the system, flush the system to clear any soldering residue. Many soldering fluxes contain Zinc Chloride, which can corrode stainless steel.

Draw at least three times the volume of the water heater to properly flush the system.


DANGER
HOT
BURN
Water temperature over 125°F can cause severe burns instantly or death from scalds.
Children, disabled and elderly are at highest risk of being scalded.
See instruction manual before setting temperature at water heater.
Feel water before bathing or showering.
Temperature limiting valves are available, see manual.

4. Initiate a call for hot water. Ensure each zone valve or circulator operates only when its thermostat calls for heat. Purge each zone of air to ensure proper operation.

5. Set the water heater to the desired temperature. Boiler high limit should be set at least 20°F higher than the heater temperature. Set the low limit of the boiler control at the minimum setting - this will call the burner on only to satisfy the tank control.

A water heater temperature setting of 120°F is recommended. However, a lower temperature setting may be required to comply with local and state codes for normal operation. The differential should be set at 10 to 15°F. Installation conditions may require a higher or lower temperature setting. A mixing valve in conjunction with a high temperature setting may be used for high demand applications (spas, hot tubs, whirlpools).

6. When the system is completely flushed, purged of air, and the temperature is set, turn on the boiler. Observe operation. Ensure the boiler shuts down after the indirect water heater set point is satisfied.

⚠ WARNING

Risk of scald injury increases as you increase water temperature.

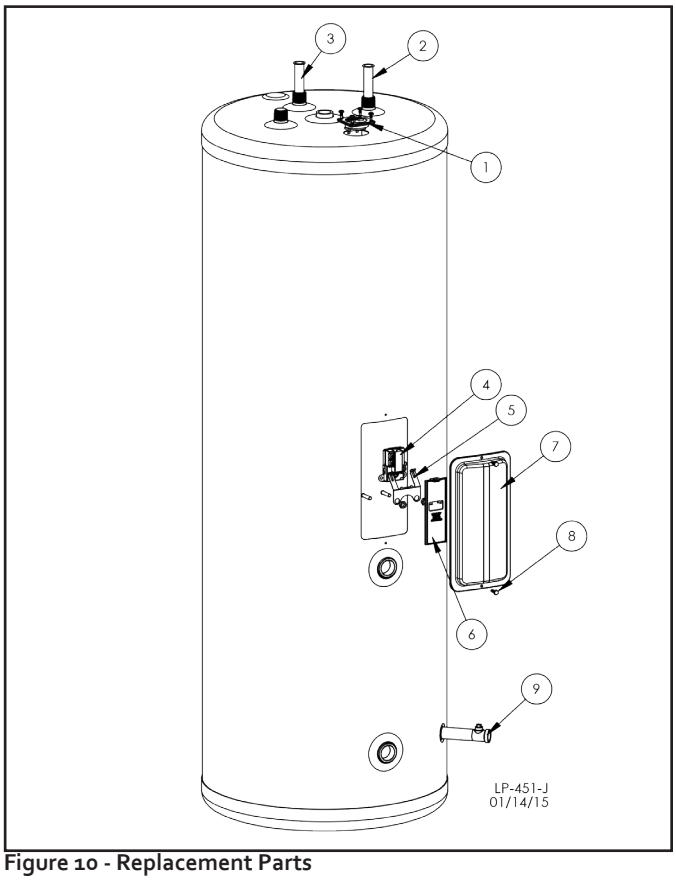


Figure 10 - Replacement Parts

Item #	Part #	Description
1	6070P-035	Terminal Block w/ Screws
2	6070P-038	Dip Tube Cold Inlet - 30 Gal
	6070P-039	Dip Tube Cold Inlet - 40 Gal
	7700P-062	Dip Tube Cold Inlet - 50 Gal
	6070P-041	Dip Tube Cold Inlet - 60 Gal
	6070P-042	Dip Tube Cold Inlet - 80 and 100 Gal
3	6070P-044	Dip Tube Auxiliary Inlet - 30 Gal
	6070P-045	Dip Tube Auxiliary Inlet - 40 and 60 Gal
	6070P-046	Dip Tube Auxiliary Inlet - 50 Gal
	6070P-047	Dip Tube Auxiliary Inlet - 80 Gal
	6070P-048	Dip Tube Auxiliary Inlet - 100 Gal
4	TD1012	Thermostat
5	6060P-633	Mounting Clip
6	6060P-634	Protective Cover
7	H3000	Electric Access Panel
8	6075P-006	Screws (#8 Self-Threading)
9	6070P-009	Combination Drain Valve

Table 3 - Replacement Parts List

Part 6 - Maintenance and Troubleshooting

Periodic maintenance should be performed by a qualified service technician to ensure all equipment is operating safely and efficiently. The owner should make necessary arrangements with a qualified heating contractor for periodic maintenance of the heater. Installer must also inform the owner that the lack of proper water heater care and maintenance may result in hazardous conditions.

Annual Maintenance Activities		Date Last Completed			
Piping		1st Year	2nd Year	3rd Year	4th Year
Near heater piping	Check heater and system piping for any sign of leakage; make sure pipes are properly supported.				
System					
Visual	Do a full visual inspection of all system components. Ensure all components (including boilers, water treatment systems, mixing valves, circulators, etc.) are operating properly and have been maintained.				
Functional	Test all functions of the system. Perform any maintenance required by local codes. Verify system pressure is in the safe operating range.				
Temperatures	Check control for temperature accuracy. *Verify safe settings on Mixing Valve (if installed in system).				
Electrical					
Smoke and CO Detectors	*Verify devices are installed and working properly. Change batteries if necessary.				
Circuit Breakers	Check to see that the circuit breaker is clearly labeled. Exercise circuit breaker.				
Connections	Check wire connections. Make sure they are tight.				
Relief and Drain Valve					
Relief Valve	Lift and release the relief valve on the water heater. Make certain that the valve operates properly by allowing several gallons to flush through the discharge line. Replace if valve is blocked or does not operate properly. NOTE: TAKE CAUTION WHEN OPERATING RELIEF VALVE. DISCHARGED WATER MAY PRESENT A SCALD RISK.				
Drain Valve	Open the drain valve and drain a few quarts of water from the bottom of the tank to flush any hard water deposits. Replace if valve is blocked or does not operate properly. NOTE: TAKE CAUTION WHEN OPERATING DRAIN VALVE. DRAINED WATER MAY PRESENT A SCALD RISK.				
Final Inspection					
Check for Combustibles	Check area around heater for combustible materials such as gasoline or paint thinner. If combustible materials are found, move away from the heater to a safe location.				
Checklist	Verify that you have completed the entire checklist. WARNING: FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.				
Homeowner	Review what you have done with the homeowner.				
Initial and Date after Inspection / Service. Continue Inspections Annually beyond the Fourth Year.					

Table 4 - Maintenance Activities Checklist - *If Applicable to System

Troubleshooting

No Hot Water

Problem	Possible Solution
Zone valve not opening	Open manually to replace
Circulator not operating	Check or replace
Tank control set too low	Raise tank temperature*
Boiler control set too low	Raise boiler temperature
Wiring incorrect	Check wiring
Tank control failure	Replace control
Zone valve failure	Replace valve
Circulator failure	Replace circulator
Air trap in loop	Purge air

Not Enough Hot Water

Problem	Possible Solution
Zone valve restriction	1" full bore replace zone valve
Circulator arrow reversed	Reverse circulator
Tank temperature too low	Raise tank temperature*
Boiler temperature too low	Raise boiler temperature
Boiler sized too small	Check sizing chart
Tank sized too small	Check sizing chart
Demand flow rate too high	Install mixing valve. Raise tank temperature
Air trap in loop	Purge air
	Install flow regulator
Heat and tank come on together	Check wiring or set indirect as priority over heating
	Draw tank down and lower thermostat. Recheck.
Not enough space heat	Boiler sized too small. Consult chart.
Slow recovery	Circulator head capacity too low

T&P Valve Discharges

Problem	Possible Solution
Tank temperature too high	Lower tank temperature
Water expands when heated	Install expansion tank
Water pressure too high	Install pressure reducing valve

Hot Tubs, Spas, Multiple Showers, High Demand

Problem	Possible Solution
Pressure too low	Check line pressure for restriction
Tank recovery slow	Slow startup boiler. See chart
Not enough hot water	Boiler sized too small. See chart
	Check flow rate. Compare to chart
	Demand too great. Check flow rates and compare to chart. Install mixing valve and/or flow restricting valve and raise tank and boiler temperature.*

Table 5 - Troubleshooting - *See scald warning below.

⚠ WARNING

The risk of scald injury increases as you increase water temperature. Use a water tempering or mixing valve and extreme caution when using hot water to avoid scald injury. Consult codes for conformance. Failure to follow the instructions in this warning statement could result in serious personal injury or death from scalds.

CAUTION

If draining of the water heater is necessary, open the T&P valve or a hot water tap to prevent vacuum buildup in the tank and piping.

Indirect Water Heater
Limited Warranty
For Residential and Commercial Use

Westinghouse warrants the indirect water heater and its parts to be free from defects in materials and workmanship according to the following terms, conditions, and time periods. UNLESS OTHERWISE NOTED THESE WARRANTIES COMMENCE ON THE DATE OF INSTALLATION. This limited warranty is only available to the original owner of the indirect fired water heater, and is non-transferable.

Residential Use Warranty (1 year – Parts, 10 years – Tank)
"Residential" setting shall mean water heater usage in a single family dwelling, or usage in a multiple family dwelling, provided that the water heater services only one (1) dwelling in which the original consumer purchaser resides on a permanent basis and operating temperatures do not exceed 140ºF.

Commercial Use Warranty (1 year – Parts, 5 years – Tank)
Water heaters used in a commercial setting shall mean any usage not falling within the definition of a "residential" setting.

COVERAGE

A. During the first year after the original date of installation in the dwelling, Westinghouse warrants that it will repair or replace, at its option, any defective or malfunctioning component of the indirect fired water heater. It is expressly agreed between Westinghouse and the original consumer purchaser that repair or replacement are the exclusive remedies of the original consumer purchaser.

B. 1. Residential Use - During the second through tenth year after the original date of installation of the water heater, Westinghouse will repair or replace, at its option, any water heater having a defect or malfunction that results in a water leak from the outside jacket, inner tank, or heat exchanger as a result of normal use and service. It is expressly agreed between Westinghouse and the original consumer purchaser that repair or replacement are the exclusive remedies of the original consumer purchaser.

2. Commercial Use - During the second through fifth years after the original date of installation, Westinghouse will repair or replace, at its option, any water heater having a defect or malfunction that results in a water leak from the outside jacket, inner tank, or heat exchanger as a result of normal use and service. It is expressly agreed between Westinghouse and the original consumer purchaser that repair or replacement are the exclusive remedies of the original consumer purchaser.

C. Should a defect or malfunction result in a leakage of water within the above-stated warranty periods due to defective material or workmanship, malfunction, or failure to comply with the above warranty, with such defect or malfunction having been verified by an authorized Westinghouse representative, Westinghouse will replace the defective or malfunctioning water heater with a replacement water heater of the nearest compatible model available at the time of replacement.

D. If Westinghouse is unable to repair or replace the water heater so as to conform to this warranty after a reasonable number of attempts, Westinghouse will provide, at its option, a replacement product. These remedies are the consumer purchaser's exclusive remedies for breach of warranty.

E. Replacement water heater will be warranted for the unexpired portion of the applicable warranty period of the original water heater.

F. If government regulations, industry certification, or similar standards require the replacement water heater or part(s) to have features not found in the defective water heater or part(s), the owner will be charged the difference in price represented by those required features. If the owner pays the price difference for those required features and/or to upgrade the size and/or other features available on a new replacement water heater or part(s), the owner will also receive a complete new limited warranty for that replacement water heater or part(s).

G. If at the time of a request for service the original consumer purchaser cannot provide a copy of the original sales receipt or the warranty card registration, the warranty period for the water heater shall then be ten (10) years (Residential Use), or five (5) years (Commercial Use), from the date of manufacture of the water heater and NOT the date of installation of the water heater.

H. This warranty extends only to indirect fired water heaters utilized in heating applications that have been properly installed by qualified professionals based upon manufacturer's installation instructions.

I. Replacement parts will be warranted for 90 days.

OWNER RESPONSIBILITIES

To avoid the exclusion list in this warranty, the owner or installer must:

1. Have a vacuum relief valve and temperature and pressure relief valve bearing the listing marks of the American Society of Mechanical Engineers (ASME) installed with the storage tank assembly in accordance with federal, state, and local codes.
2. Operate the storage tank assembly at pressure below that shown on the rating plate on the pressure relief valve.
3. Keep the storage tank free of damaging scale deposits.
4. Use the water heater in an open system, or in a closed system with a properly sized and installed thermal expansion tank.
5. Make provisions so if the storage tank or any component part or connection thereto should leak, the resulting flow of water will not cause damage to the area in which it is installed.

WARRANTY EXCLUSIONS

This limited warranty will not cover:

1. Any water heater purchased from an unauthorized dealer or online retailer.
2. Any water heater not installed by a qualified heating installer/service technician.
3. Service trips to teach you how to install, use, maintain, or bring the water heater installation into compliance with local building codes and regulations.
4. Failure to locate the water heater in an area where leakage of the tank or water line connections and the combination temperature and pressure relief valve will not result in damage to the area adjacent to the water heater or lower floors of the structure.
5. Any failed components of the heat system not manufactured by Westinghouse as part of the water heater.
6. Water heaters repaired or altered without the prior written approval of Westinghouse.
7. Damages, malfunctions, or failures resulting from failure to install the water heater in accordance with applicable building codes/ordinances or good plumbing and electrical trade practices; or failure to operate and maintain the water heater in accordance with the manufacturer's provided instructions.
8. Failure or performance problems caused by improper sizing of the water heater, expansion device, or piping.
9. Damages, malfunctions, or failures resulting from improper installation or failure to operate the water heater at pressures not exceeding the working pressure shown on the rating plate.
10. Failure to operate the water heater in an open system, or in a closed system with a properly sized and installed thermal expansion tank.
11. Damages, malfunctions, or failures caused by abuse, accident, fire, flood, freeze, lightning, acts of God and the like.
12. Tank failures (leaks) caused by operating the water heater in a corrosive or contaminated atmosphere.
13. Failure of the heater due to the accumulation of solid materials, lime deposits, or water quality contrary to the manufacturer's

provided instructions. WATER CHEMISTRY REQUIREMENTS – Sodium less than 20mGL. Water pH between 6.0 and 8.0. Hardness less than 7 grains. Chlorine concentration less than 100 ppm.
14. Any damages, malfunctions, or failures resulting from the use of dielectric unions.
15. Components of the water heater that are not defective, but must be replaced during the warranty period as a result of reasonable wear and tear.
16. Production of noise, taste, odors, discoloration, or rusty water.
17. Damages, malfunctions, or failures caused by subjecting the tank to pressures greater than those on the rating label.
18. Water heaters moved from the original installation location.
19. Water heaters that have had their rating labels removed.

PROCEDURES FOR WARRANTY SERVICE REQUESTS

Any claim for warranty assistance must be made promptly. Determine if the water heater is "in-warranty" (that is, within the applicable warranty period) by reviewing a copy of the original sales receipt. You must present a copy of the original sales receipt for a warranty service request.
If your water heater is "in-warranty", contact the retailer from whom the water heater was purchased (or the installer) for assistance. Be prepared to provide the retailer or installer with a copy of your original receipt, complete model and serial numbers, and the date of installation of your water heater, in addition to explanation of your water heater problem.
Warranty coverage is subject to validation of "in-warranty" coverage by Westinghouse claims department personnel. All alleged defective or malfunctioning parts must be returned to Westinghouse via the local distribution channels where original purchase was made. NOTE: Any parts or heaters returned to Westinghouse for warranty analysis will become the property of Westinghouse and will not be returned, even if credit is denied. If all warranty conditions are satisfied, Westinghouse will provide replacement parts to the retailer.
If you have questions about the coverage of this warranty, please contact Westinghouse at the phone number stated below:

1-774-417-6000

SERVICE, LABOR AND SHIPPING COSTS

This limited warranty does not extend to any shipping charges, delivery expenses, or administrative fees incurred by the purchaser in repairing or replacing the water heater or part(s). This warranty does not extend to labor costs beyond the coverage specified in this warranty document. All such expenses are your responsibility.

LIMITATIONS OF YOUR Westinghouse WARRANTY AND REMEDIES

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND ARE GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OBLIGATION, LIABILITY, RIGHT, CLAIM OR REMEDY IN CONTRACT OR TORT, WHETHER OR NOT ARISING FROM WESTINGHOUSE'S NEGLIGENCE, ACTUAL OR IMPUTED. THE REMEDIES OF THE PURCHASER SHALL BE LIMITED TO THOSE PROVIDED HEREIN TO THE EXCLUSION OF ANY OTHER REMEDIES INCLUDING WITHOUT LIMITATION, INCIDENTAL OR CONSEQUENTIAL DAMAGES, SAID INCIDENTAL AND CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, PROPERTY DAMAGE, LOST PROFIT OR DAMAGES ALLEGED TO HAVE BEEN CAUSED BY ANY FAILURE OF WESTINGHOUSE TO MEET ANY OBLIGATION UNDER THIS AGREEMENT INCLUDING THE OBLIGATION TO REPAIR AND REPLACE SET FORTH ABOVE. NO AGREEMENT VARYING OR EXTENDING THE FOREGOING WARRANTIES, REMEDIES OR THIS LIMITATION WILL BE BINDING UPON WESTINGHOUSE. UNLESS IN WRITING AND SIGNED BY A DULY AUTHORIZED OFFICER OF WESTINGHOUSE. THE WARRANTIES STATED HEREIN ARE NOT TRANSFERABLE AND SHALL BE FOR THE BENEFIT OF THE ORIGINAL PURCHASER ONLY.

NO OTHER WARRANTIES

Your warranty gives you specific legal rights, and you may also have other rights that vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages so this limitation or exclusion may not apply to you. These are the only written warranties applicable to the Indirect Fired Water Heater manufactured and sold by Westinghouse. Westinghouse neither assumes nor authorizes anyone to assume for it any other obligation or liability in connection with said Indirect Fired Water Heaters. Westinghouse reserves the right to change specifications or discontinue models without notice.

Customer Installation Record Form	
The following form should be completed by the installer for you to keep as a record of the installation in case of a warranty claim. After reading the important notes at the bottom of the page, please also sign this document.	
Customer's Name	
Date of Installation	
Installation Address	
Product Name / Serial Number(s)	
Comments	
Installer's Code / Name	
Installers Phone Number	
Signed by Installer	
Signed by Customer	

IMPORTANT

Customer: Please only sign after the installer has fully reviewed the installation, safety, proper operation, and maintenance of the system. If the system has any problems please call the installer. If you are unable to make contact, please call your sales representative.
Distributor / Dealer: Please insert contact details.